UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,516	02/05/2004	Frederick M. Mako	MAKO-12 CONT	6541

7590 09/08/2006

Ansel M. Schwartz
Suite 304
201 N. Craig Street
Pittsburgh, PA 15213

EXAMINER	
MAYES, MELVIN C	

ART UNIT	PAPER NUMBER
1734	

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

Office Action Summary	Application No.	Applicant(s)	
	10/773,516	MAKO ET AL.	
	Examiner	Art Unit	
	Melvin Curtis Mayes	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 8/1/06.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 9-11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 9-11 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Terminal Disclaimer

(1)

The terminal disclaimer filed on August 1, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,692,597 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

(2)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(3)

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6-256067 in view of DiChiara, Jr. 6,494,979.

JP 6-256067 (JP '067) discloses a method of joining ceramics comprising: providing a slurry of polysilazane compound, polycarbosilane compound and silicon carbide powder of mean particle diameter of 2 micrometers in solvent; applying the slurry to the end faces of two silicon carbide bars; gluing the end faces together; and calcinating (heating) at temperature of 1200°C to maximize flexural strength (computer translation ([0024]-[0026], Table 2). JP '067 does not disclose providing the end faces of the silicon carbide bars to which the slurry is applied as tapered.

DiChiara, Jr. teaches that in bonding ceramic members at their end portions using a ceramic binder, the end portions are provided as mitered so that the mating surfaces are angled with respect to the exterior surfaces of the members to increase the surface area of the joint as compared to a conventional butt joint to increase the strength in the area of the joint (col. 5, lines 29-36).

It would have been obvious to one of ordinary skill in the art to have modified the method of JP '067 for bonding two silicon carbide bars at their end faces by providing the end faces as mitered (tapered), as taught by DiChiara, Jr., to increase the surface area of the joint compared to a conventional butt joint to increase the strength in the area of the joint bonded by ceramic. Providing the end faces of the two ceramic bars as mitered, and thus tapered, would have been obvious to one of ordinary skill in the art to increase the strength of the joint between the bars by increasing the surface area of the joint, as taught by DiChiara, Jr.

By providing the silicon carbide powder of mean particle diameter of 2 microns, the slurry applied to the end faces includes silicon carbide powder having particle size in the range between 20 nm and 35 microns, as claimed in Claim 10, and includes silicon carbide powder having at least two distinct particles sizes, as claimed in Claim 11, since a mean particle size of 2 microns implies that there is a range of particle sizes, the mean size of which is 2 microns.

(4)

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barton et al. 6,214,472 in view of DiChiara, Jr. 6,494,979.

Barton et al. disclose a method of joining ceramics comprising: providing silicon carbide continuous fiber ceramic composite bars; applying to the axial end of each bar, a preceramic

bonding agent paste; joining the bars together end-to-end; and heating to 1200°C to form a butt joint (col. 3-8). Barton et al. do not disclose providing the end of each bar with a tapered area.

DiChiara, Jr. teaches that in bonding ceramic members at their end portions using a ceramic binder, the end portions are provided as mitered so that the mating surfaces are angled with respect to the exterior surfaces of the members to increase the surface area of the joint as compared to a conventional butt joint to increase the strength in the area of the joint (col. 5, lines 29-36).

It would have been obvious to one of ordinary skill in the art to have modified the method of Barton et al. for joining two silicon carbide fiber composite bars at their end faces by providing the end faces as mitered (tapered), as taught by DiChiara, Jr., to increase the surface area of the joint compared to a conventional butt joint to increase the strength in the area of the joint bonded by ceramic. Providing the end faces of the two ceramic bars as mitered, and thus tapered, would have been obvious to one of ordinary skill in the art to increase the strength of the joint between the bars by increasing the surface area of the joint, as taught by DiChiara, Jr.

Response to Arguments

(5)

Applicant's arguments filed August 1, 2006 have been fully considered but they are not persuasive.

Applicant argues that JP 6-256067 does not address joint geometry, joint thickness or hermiticity and argues that DiChiara does not specify joint thickness.

(6)

While JP 6-256067 does not mention joint geometry, providing ends of two bodies to be joined as tapered is clearly suggested by DiChiara, Jr. to increase the surface area of the joint compared to a conventional butt joint to increase the strength in the area of the joint. With respect to joint thickness or hermiticity, there is no claim limitations directed to joint thickness or hermiticity.

Conclusion

(7)

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

(8)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Melvin Curtis Mayes
Primary Examiner
Art Unit 1734

MCM
September 5, 2006